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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/863,939	05/23/2001	Victor Wai Leung Lee	225133600017	9997

7590 02/26/2004

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CANADA

EXAMINER
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LAO, TIM P

ART UNIT	PAPER NUMBER
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2655

DATE MAILED: 02/26/2004

6

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/863,939

Applicant(s)

LEE ET AL.

Examiner

Tim Lao

Art Unit

2655

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 23 May 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Specification*

1. The disclosure is objected to because of the following informalities:

On page 8, line 1, the phrase "When the noise domain is a traffic noise domain" should be changed to -- When the noise domain is a small children noise domain -- in order for the statement to be true and not be contradictory to the previous statement. Appropriate correction is required.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rose et al. (US Patent Application Publication 2002/0059068 A1) in view of Srenger et al. (US Patent 6,226,612 B1).

Claim 1

Rose et al. show:

a computer-implemented speech recognition (ASR) method for handling noise contained in a user input speech, comprising the steps of: (see Abstract)

receiving from a user the user input speech that contains environmental noise (e.g., street background noise) and useful sounds; (p.2, ¶ 0029)

*{Useful sounds are inherently presented in the user's speech utterances.}*

selecting a domain acoustic noise model (e.g., street background noise model) from a plurality of candidate domain acoustic noise models (e.g., noise model for street background noise, driving in a car, engine noise, radio noise, road noise, etc..., p.3, ¶ 0031, II.5, 19-20)

that substantially matches acoustic profile of the environmental noise in the user input speech (e.g., noise presented in the received signal, p.2, ¶ 0030, ll.7-10; p.2, ¶ 0028, ll.11-13), each of said candidate domain acoustic noise models containing a noise acoustic profile specific to a pre-selected domain (e.g., street, engine, radio, etc...); (p.2, ¶ 0030, ll.1-12; p.3, ¶ 0031) *{Other examples pre-selected domain include home office environment and office environment. (p.5, ¶ 0052, ll.1-5)}*

adjusting an environmental noise language model (e.g., speaker noise model, p.5, ¶ 0051, ll.3-5) based upon the selected domain acoustic noise model (the matched compensation model or new compensation model, p.4, ¶ 0051, ll.11-16) for detecting the environmental noise within the user input speech; (¶ 0051 on p.4 & p.5)

*{1. A noise model is searched from a series of stored background noise models, i.e., candidate domain acoustic noise models, in the memory to determine a noise model matches the noises presented in the received signal. (p.3, ¶ 0034, ll.5-12)*

*2. If it is a match, then the selected noise model is the compensation model. If not, then a new compensation model is generated (p.4, ¶ 0051, ll.11-16). Therefore, the matched compensation model or the new compensation model is equivalent to the selected domain acoustic noise model.*

*3. The speaker noise model is considered to be an environmental noise language model because it models the noise presented in the received signal of the user's utterances.*

*4. The speaker noise model is adjusted or adapted through the compensation process for the detection of environmental background noise within the user input speech. (p.5, ¶ 0051, ll.8-12)}*

adjusting a language model (e.g., speech recognition model) based upon the selected domain acoustic noise model for detecting the useful sounds within the user input speech; and (p.5, ¶ 0051, ll.8-12)

*{1. The intended purpose of the speech recognition model is for detecting useful sounds, e.g., intelligible words or sentences, from the user input speech with background noise.*

*2. The language model is adjusted or adapted through the compensation process for the detection of useful sounds within the user input speech. (p.5, ¶ 0051, ll.8-12)}*

performing speech recognition upon the user input speech using the adjusted environmental noise language model and the adjusted language model. (p.5, ¶ 0051, ll.11-12) *{Speech recognition is performed for the user based on the compensated speech model*

*which include the speaker noise model, i.e., the adjusted language model and the adjusted environmental noise language model.}*

Rose et al. do not show:

receiving from a user the user input speech that contains vocalized noise;

adjusting a vocalized noise model based upon the selected domain acoustic noise model for detecting the vocalized noise within the user input speech;

performing speech recognition upon the user input speech using the adjusted vocalized noise model.

However, Srenger et al. teach:

receiving from a user the user input speech that contains vocalized noise (i.e., out-of-vocabulary (OOV) utterances); (Srenger et al., col.1, ll.34-40; col.3, ll.5-8)  
*{According to the definition by Campbell et al. (US Patent 6,438,519 B1), out-of-vocabulary utterances are sounds such as "oh", "ah", "er", (see col.1, ll.31-35 of the attached Campbell et al. reference).}*

adjusting a vocalized noise model (i.e., garbage model) for detecting the vocalized noise (i.e., out-of-vocabulary (OOV) utterances) within the user input speech; (Srenger et al., col.3, ll.23-33; col.5, ll.35-41)

performing speech recognition upon the user input speech using the adjusted vocalized noise model. (col.5, ll.44-46)

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the speech recognition method of Rose et al. to include the out-of-vocabulary detection method of Srenger et al. in order to adjust different types of noise models to detect useful sounds, vocalized noise, and environmental noise within a user input speech. The advantage of combining both methods would be the benefit of an accurate and robust speech recognition system. (Srenger et al., col.2, ll.59-65 ; Rose et al., p.2, ¶ 0030, ll.20-23)

**Conclusion**

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent Documents:

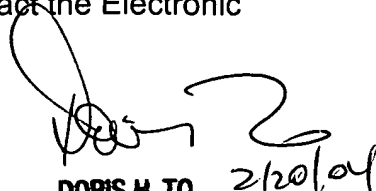
- [1] 6,529,872 B1     03/2003     Cerisara et al.
- [2] 6,243,677 B1     06/2001     Arslan et al.
- [3] 6,418,411 B1     07/2002     Gong

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tim Lao whose telephone number is 703-305-8955.

The examiner can normally be reached on M-F, 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doris To can be reached on 703-305-4827. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
**DORIS H. TO** 2/20/04  
**SUPPLEMENTARY EXAMINER**  
**TECHNICAL STAFF**

Application/Control Number: 09/863,939  
Art Unit: 2655

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Tim Lao  
Examiner  
Art Unit 2655

TL  
02/20/04